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SUBNORMAL ACCOMMODATIVE POWER IN YOUNG PERSONS A NOT INFREQUENT CAUSE OF ASTHENOPIA.[1]

BY SAMUEL THEOBALD, M. D., *Ophthalmic and Aural Surgeon to the Johns Hopkins Hospital.*

While the investigations of Donders and Von Graefe, by giving us a clearer conception of the refractive and muscular anomalies of the eyes, very properly led to an abandonment of the older teaching that the complex of symptoms which we know as asthenopia is usually dependent upon imperfect accommodative power, it is open to question whether in this instance, as in so many others, the pendulum did not swing too far in the opposite direction; or, in other words, whether in ascribing to refractive errors or deficiencies of the extrinsic eye muscles practically all cases of asthenopia occurring in early life, while ignoring wholly the condition of the ciliary muscles, we have not committed an error similar in kind, if not in degree, to that which our fathers committed in clinging to exactly the opposite opinion.

For one, I am strongly disposed to think that such is the case, for my experience has convinced me that beside the failure of accommodative power due to age and that which follows exhausting illness, there is a condition which may be properly termed insufficiency of the ciliary muscles, which is of not very infrequent occurrence, and which is as capable of producing asthenopic symptoms as are the insufficiencies of the extrinsic eye muscles which have rightly received so much of our consideration. Like the latter, it may occur independently of refractive errors or in connection with them, as a complicating factor; it may also exist apart from, or be associated with other muscular anomalies. It is met with not infrequently in different members of the same family, and is in many instances, no doubt, an inherited or congenital defect. Though in some respects it is so closely related to presbyopia, the symptoms which attend it are by no means the same, but resemble more nearly those which are characteristic of hypermetropia—asthenopia, and very often headache, not defective vision, being the chief complaint.

I have recognized it as a distinct condition only in the young; after middle life it would be difficult to distinguish it from presbyopia. Its existence in connection with presbyopia, however, affords a sufficient explanation of the frequently observed fact that, independently of differences in refraction, persons of the same age often require reading glasses of very unequal strength. Finally, its presence is not to be detected by the tests which are usually employed to determine the existence of presbyopia. The smallest of Jaeger's types are usually read with facility, and the nearest point at which the words can be distinguished, at least momentarily, may or may not be appreciably different from what the age of the patient would lead us to expect. Indeed, paradoxical as the statement must appear to be, the subjects of this anomaly not infrequently elect, habitually, to hold the printed page, or other small object upon which their gaze is fixed, unusually close to the eyes, thereby seeming to lessen their discomfort, for reasons which will presently be referred to.

[1] A paper read before the American Ophthalmological Society at its recent meeting in Washington, in connection with the Congress of American Physicians and Surgeons.

In view of what has been stated, the question will naturally arise, how is the condition under consideration to be recognized? Before answering this question it will be necessary to make something of a digression, and to direct our attention for a few moments to that important fact in the physiology of binocular vision, the correlation of the functions of the internal recti and of the ciliary muscles. It has been usual to speak of the parallelism which exists in emmetropic eyes between the accommodative movement and the convergence of the optic axes. This parallelism, however, is not as absolute as, *a priori*, one would expect it to be. It is, of course, true that in binocular vision for near objects a given tension of accommodation is ordinarily accompanied by a corresponding movement of convergence, so that when we accommodate for ten, twelve or fifteen inches we converge for a like distance; but, on the other hand, if by means of a prism vertical diplopia be induced, we shall find that, *in accommodation for near objects*, this parallelism is not, as a rule, maintained. Under such circumstances a given tension of accommodation is *not* accompanied by the degree of convergence of the visual lines which attends it under ordinary conditions. A relative divergence of the visual lines occurs, so that the eyes accommodate for a nearer point than they converge for. The extent of this relative divergence varies somewhat, even in emmetropes with normal muscular balance; but, judging from my own experience, I should say that in emmetropic persons, below the presbyopic age, and with normal muscular balance, it seldom falls below 3°, and is not apt to exceed 5° or 6°. It will be observed that this relative divergence, which in common with other observers I regard as entirely normal,[1] occurs only in *near* vision. In distant vision, under like conditions, no such deviation of the visual lines takes place. It is, in my judgment, of the utmost importance, in dealing with refractive and muscular anomalies, that the normal character of this relative divergence of the eyes in near vision, with induced vertical diplopia, should be clearly recognized, and that it should not be mistaken, as I strongly suspect it often is, for insufficiency of the internal recti muscles.

Expressed in the convenient terminology proposed by Dr. Stevens, the fact which I wish to lay especial stress upon is, that in eyes which are in every respect normal, the modified vertical diplopia test of Von Graefe should show orthophoria when the test object is at 20′, and exophoria of from 3° to 6° when it is at the usual reading distance, which I assume to be about 13″. The corollary of this is that when, with orthophoria at 20′, the test shows more than 6° or less than 3° of exophoria at the reading distance, there is ground for suspecting some abnormality in the muscular or refractive condition of the eyes.

Let us first take the case in which, with distant orthophoria, there is an excess of exophoria shown by the near test, and consider what conditions would be likely to produce it. Insufficiency of the internal recti muscles of low grade, hypersthenia of the ciliary muscles, and myopia are the conditions which at once suggest themselves. In myopia the relative divergence in near vision is excessive because there is little or no tension of accommodation, for this means, of course, that, owing to the correlation of the two functions, the internal recti are but feebly stimulated to contraction. When the ciliary muscles are abnormally strong, or the internal recti weak, the same result happens, because, in the first instance, the exceptionally strong ciliary muscles require but a feeble nervous stimulus to enable them to perform their work, and this is accompanied by a correspondingly feeble stimulation of the interni, and, in the second instance, the weak interni receive only the stimulus which attends the ordinary accommodative effort, whereas something more than this is required, because of their feebleness, to enable them to perform the work done by the normal muscles.

If, now, we turn to the opposite condition in which, at the reading distance, there is less than the normal amount of exophoria (orthophoria, be it remembered, being assumed in distant vision) and ask ourselves what *it* may be caused by, we shall have to conclude, so, at least, it seems to me, that there is but one anomaly competent to produce it, and that is *insufficiency of the ciliary muscles or subnormal accommodative power.* The explanation of the way in which this happens is, of course, easily deduced from what has already been said as to the influence of abnormally strong ciliary muscles upon the action of the internal recti: the weak ciliary muscles will require excessive stimulation to enable them to accomplish their task, and this involves, necessarily, a corresponding stimulation and consequent over-action of the normal interni.

At first glance it might seem that hypermetropia and insufficiency of the external recti muscles should have been classed with weakness of the ciliary muscles, as anomalies competent to produce the condition under consideration. But, each of these anomalies, if it existed in sufficient degree to modify the exophoria in the near test, should influence to even a greater degree the result of the distant test, so that we should not have the distance orthophoria, assumed to be present. It must not be inferred, however, from what has been said that insufficiency of the ciliary muscles exists only, or that its presence can be demonstrated only, when there is orthophoria in distant vision. As has been remarked, it may exist in connection with, and may complicate any of the refractive or any of the other muscular anomalies. What general rule, then, can be laid down for its detection? In the assumed case of a non-presbyopic individual with orthophoria in distant vision, the discovery of orthophoria at the reading distance, or of exophoria of but 1° or 2°, should be regarded, in accordance with the foregoing reasoning, as conclusive proof of the existence of subnormal accommodative power. But, how shall we proceed when the distant test reveals the presence of lateral heterophoria? The rule which I have formulated, and which I have followed for several years with satisfactory results, is this: *Whatever the muscular balance may be in the distance, the vertical diplopia test at* 20′ *ought to show a difference in favor of the internal recti muscles, as compared with the test at* 13″, *of at least* 3°, *oftener of as much as* 4°

[1] Upon this point Dr. Noyes remarks: "It is most common to find that the images do not stand vertically above each other, but that there is a deviation in the sense of abduction of about 5°; this cannot be called abnormal. More than this must be noted. A deviation in the sense of convergence is always abnormal and directs suspicion upon the externi."—Noyes: Diseases of the Eye, p. 195.

or 5°. When this is not the case there is subnormal accommodative power.

For example, let us suppose a young asthenope, with esophoria at 20′ of 2°. If he has normal accommodative power, I should expect to find exophoria at 13″ of at least 1°, and probably would find as much as 2° or 3°. Again, if the distance test revealed exophoria of, say, 3°, I should anticipate that the near test would show exophoria of from 6° to 9°. If, however, in the first mentioned example there were found as much esophoria at 13″ as at 20′ (and *a fortiori*, if more were found), or if in the second there were as little (or less) exophoria at 13″ as at 20′, I should conclude that there was subnormal accommodative power. A few typical cases which I shall presently give in brief will illustrate the application of this rule, as well as the satisfactory results which have ensued from following its indications.

Allusion has been made to the fact that in some cases of asthenopia from subnormal accommodative power the subjects of the defect elect to read at an exceptionally near point. I do not for a moment believe that we have here a repetition of what occurs in some cases of hypermetropia of high grade—a disposition to increase the size of the retinal image even at the cost of greater indistinctness. The explanation which seems to me most satisfactory is that the weak ciliary muscle, when supported by a strong convergent effort, is better able to perform its task, though the task be a heavier one, than it is when, with the type held further off, the tension upon the internal recti is much less. However this may be, it is an observation worthy of remark that when appropriate convex glasses are prescribed the habit disappears, the disposition to hold the type at a more usual distance manifesting itself, in some instances, the moment the glasses are put before the eyes.

That we have in convex glasses the means of getting rid of the unpleasant consequences which the existence of subnormal accommodative power frequently entails, cannot but be evident. It may not be so evident at first glance, however, just how the strength of the glass to be prescribed should be determined. The rule which I have adopted, with very satisfactory results, is this: *Ascertain by trial the weakest convex spherical glass which will give, at* 13″, *the minimum amount of normal exophoria* (*from* 2° *to* 3°) *and prescribe this for systematic use in near vision.* Should the strength of this glass be so considerable as to bring the binocular far point inconveniently close to the eyes, reduce it, and endeavor to accomplish the end in view by decentering the lenses outwards as much as practicable. In this way, by permitting some over-action on the part of the interni, at the same time that we lessen the work of the weak ciliary muscles, we shall almost always succeed in accomplishing all that we desire. I may add that I do not recall any case in which a greater prismatic effect than could be obtained in this way, was called for.

The coëxistence of subnormal accommodative power with hypermetropia, or with true insufficiency of the external recti muscles, produces a condition likely to give rise to especially troublesome consequences; and when all three exist together, we have a "triple alliance" which requires radical remedial measures. Its association with hypermetropia, as my experience has not infrequently shown, may make it necessary, even in quite young subjects, to prescribe glasses of different strengths for distant and for near vision, while its presence in connection with insufficiency of the external recti muscles would make us more disposed to resort to tenotomy of the interni, should the amount of external insufficiency be considerable enough to warrant it. On the other hand, for reasons which are obvious, when subnormal accommodative power is associated with myopia, or with insufficiency of the internal recti muscles, the likelihood of its causing much annoyance is decidedly lessened.

The first illustrative case that I shall give a brief synopsis of is one of subnormal accommodative power, uncomplicated by appreciable refractive or other muscular error.

CASE I.—Miss C., about 20 years of age, was compelled to use her eyes a good deal, doing fine needle-work, and complained greatly of asthenopia and headache. She was found to have orthophoria at 20′ and exophoria at 13″ of only ½°, at least 2½° less than should have been present. Examined under a mydriatic (a two-grain solution of duboisia), scarcely .25 of hypermetropia was discovered; there was also a slight amount of irregular (probably lenticular) astigmatism. A diagnosis of subnormal accommodative power was made,[1] and + $\frac{1}{36}$s glasses were prescribed for near work. As with this correction the exophoria at 13″ was only increased to 2°, each lens was ordered to be decentered outwards 5 mm. The glasses gave immediate and complete relief, and during the past year have enabled the patient, who afterwards was appointed to a position as copyist in the Census Bureau at Washington, to perform her duties without discomfort. It may be mentioned as of interest that a first cousin of this patient also exhibits subnormal accommodative power. She has astigmatism against the rule, and, although much below the presbyopic age, derives great satisfaction from having a glass especially adapted for near vision by the addition of a convex spherical to her full distance correction.

CASE II.—Master W. C., about 12 years of age, affords an example of subnormal accommodative power associated with hypermetropia. This patient first came under observation in August, 1889. He was then complaining of asthenopia and headaches. With accommodation paralyzed by the liberal use of a four-grain solution of atropia, a total hypermetropia of $\frac{1}{36}$ was found in each eye, with an insignificant amount of astigmatism according to the rule. The vertical diplopia test showed esophoria of 1° at 20′ and of 2° at 13″. Glasses (+ $\frac{1}{36}$s) were prescribed, to be tried at first only in near vision. Marked relief followed the use of these (which he soon preferred to wear in distant as well as near vision), but was not of very long duration, as he returned six months afterwards with a recurrence of asthenopia and headaches and with blepharitis marginalis. His muscular balance was again tested, and there was found less than ½° of esophoria at 20′, with ½° at 13″. With his glasses (+ $\frac{1}{36}$s) there was neither exophoria nor esophoria at 13″. His asthenopia was judged to be due to

[1] Tested by her ability to read J. No. 1, her range of accommodation $\left(\frac{1}{A} = \frac{1}{4\frac{1}{2}}\right)$ was not below what might have been expected at her time of life.

subnormal accommodative power, and, in accordance with this view, stronger glasses, adapted only for near vision, were given him, while the previously prescribed glasses were to be worn for distance. It was found that with + 2.s there was about 2° of exophoria at 13″ (the degree being variable, sometimes dropping to 0°), and this was the strength decided upon, the lenses being decentered outwards 4 mm. The relief which followed the use of these glasses was complete, and has lasted up to the present time.

Case III.—Master H. C., 11 years of age, is a brother of the patient whose case has just been described. In his case subnormal accommodative power and insufficiency of the external recti are associated. When first seen in February, 1890, with less than .25 manifest hypermetropia, there was esophoria at 20′ of 2°, at 13″ of 4°. Temporary relief followed the use in near vision of + 1.25s, with outward decentering; but, in April, 1891, the asthenopic symptoms returned in spite of the glasses. The tests then showed esophoria of 4° at 20″, and of 7° at 13″, and even with + 2.s the esophoria at 13″ was still 5°. Progressive, gymnastic prisms were prescribed at this time, and they were used systematically for some weeks, the same reading glasses being worn as before. After this treatment had been kept up for six weeks the asthenopic symptoms disappeared (although the tests showed but little improvement in the muscular balance), and have not, I believe, returned up to this time. A sister of these two lads has also been under my care recently, and she, too, shows marked insufficiency of accommodative power.

I might cite many other cases in which I have felt warranted in diagnosticating subnormal accommodative power, and in which the remedial measures adopted in accordance with this diagnosis have yielded good results, but those which I have described are sufficient for the purpose in view, and I will not occupy your time with a recital of others.

Before concluding, it may not be amiss to add a word in reference to the manner in which I employ the vertical diplopia test, since this has a most important bearing upon the points which have been brought forward in this paper.

In the first place, I employ as weak a prism as possible to induce the vertical diplopia, since this lessens the likelihood of error from slight deviations in the position of the prism. In the distance test I find one of 4° usually strong enough, and in the test at 13″ one of 7°. The test object which I generally employ in the distance is a white dot, 2 cm. in diameter, upon a black board twenty feet from the patient. I find it more convenient to use this than to employ a candle flame, and I believe that it affords a rather more accurate test. When the vision is very poor from any cause, I use the candle flame, since the white dot is not seen under such circumstances with sufficient distinctness. In the near test I use a fine star (a small printed asterisk is the best), upon a white card attached to the end of a rod 13″ long, and I consider it of the first importance that the subject under examination should be induced to accommodate accurately for this object while the test is in progress. As to the prisms, they are taken from the trial case, and I usually hold them in my hands, being satisfied that, with the weak prisms which I employ to produce vertical diplopia, I can make the test in this way with a degree of accuracy sufficient to avoid appreciable error.

ANNOUNCEMENT OF LECTURES AND CLINICS.

On and after Monday, January 4th, 1892, the course of lectures previously advertised for graduates in medicine will be given in the Clinical Amphitheatre as below.

Dr. H. M. Thomas, Mondays at 4.30 p. m. during January, February and March. *Subject:* "Paralysis."

Dr. J. S. Billings, Mondays at 4.45 p. m. during January. *Subject:* "The History of Medicine."

Dr. William Osler, Tuesdays at 3.30 p. m. during January, February and March. *Subjects:* "Diseases of the Liver," "Polio-Myelitis in Children," "Treatment of Bright's Disease," and "Digitalis."

Dr. W. D. Booker, Tuesdays at 4.30 p. m. during January and two weeks in February. *Subjects:* "Summer Diarrhœas of Children." 1. "Etiology." 2. "Relation of Bacteria to Summer Diarrhœas, with a Description of Bacteria in the Stools of Healthy Sucklings." 3. "Description of the Different Forms of Summer Diarrhœa, Symptoms and Diagnosis." 4. "Treatment of Summer Diarrhœa—Dietetic, Medicinal, Mechanical."

Dr. W. S. Halsted, Wednesdays at 3 p. m. during January, February and March. *Subjects:* "Tuberculosis of Bones and Joints" and "Tumors of Neck."

Dr. H. A. Kelly, Wednesdays at 4.30 p. m. during January, February and March. *Subjects:* "Pelvic Abscess," "Cancer of Uterus," "Retroflexion of the Uterus," "Extra-Uterine Pregnancy," "Resuscitation of the Asphyxiated New-born Child," "The Contraction Ring," "The Obstetric Forceps," and "Axis Traction."

Dr. R. B. Morison, Thursdays at 2.30 p. m. during January, February and March. *Subject:* "Clinical Cases of Skin Diseases."

Dr. Theobald, Thursdays at 3.30 p. m. during January, February and March. *Subjects:* "The Diagnosis and Treatment of the Affections of the Eyes more frequently met with, including the different varieties of Conjunctivitis, Keratitis and Iritis, Diseases of the Lachrymal Apparatus, Glaucoma, Cataract, and Refraction and Muscular Anomalies."

Dr. W. T. Councilman, Thursdays at 4.30 p. m. during January, February and March. *Subject:* "The Intestinal Lesions of Typhoid Fever, Tuberculosis, Dysentery and other Diseases."

Dr. G. H. F. Nuttall, Fridays at 3 p. m. in January, February and March. *Subjects:* "Immunity" and "Disinfection."

Dr. W. H. Welch, Fridays at 4.30 p. m. in January, February and March. *Subject:* "Infectious Diseases."

Clinics in General Medicine. Dr. Osler, Wednesdays at 12 m.

Clinics in Gynecology. Dr. Kelly, Thursdays at 12 m.

Clinics in Operative Surgery. Dr. Halsted, Fridays at 9 a. m.

Graduates in medicine resident in Baltimore will be admitted to the lectures and clinics in the Amphitheatre, without charge, by registering at the office of the Hospital and obtaining tickets of admission.

Dispensary clinics, *open only to the attendants upon regular courses at the Hospital*, will be held in their respective rooms at the Dispensary as follows:

Clinics in Diseases of Children. Dr. Booker, Mondays at 11 a. m.

Clinics in Minor Surgery. Dr. Finney, Tuesdays at 11 a. m.

Clinics in Genito-Urinary Surgery. Dr. Brown, Fridays at 11 a. m.

DEATH OF FRANCIS T. KING, PRESIDENT OF THE JOHNS HOPKINS HOSPITAL.

Mr. Francis T. King, the President of the Johns Hopkins Hospital and a member of the Board of Trustees of the University, died in Baltimore, December 18, 1891.

The Board of Trustees of the Johns Hopkins Hospital, the members of its medical staff and others in its service, the Trustees of the Johns Hopkins University, its President and Professors and others connected with it, met in the Library of the Hospital on Saturday, December 19, 1891, at 4 o'clock P. M.

Mr. William T. Dixon, Vice-President of the Hospital Trustees, took the chair, and Mr. George W. Corner acted as secretary of the meeting.

Remarks of Mr. William T. Dixon, Vice-President of the Johns Hopkins Hospital.

Our beloved friend and honored associate, Francis T. King, is dead, and we meet together this afternoon to take such action as may seem appropriate. This inexpressibly sad event comes to us as a deep personal grief, and so suddenly, we cannot now realize that we are no more to have his endeared presence here and no longer to enjoy his genial companionship. Neither can we yet appreciate the very great loss that has been sustained by the Johns Hopkins Hospital, the University, and the several institutions and corporations with which he was so prominently connected. There are but few men in this or in any community who, in every relation of life, measure up to the high standard to which Francis T. King attained.

His death, while so great a shock to us, was, I am confident, not unexpected by him, as he has frequently stated in recent conversations with me that he felt his earthly career was fast drawing to a close. Only a week ago he convened a special meeting of the Executive Committee of the Hospital, and told us that the condition of his health was so precarious that it was a duty he owed to the Hospital, to his family and to himself, to relinquish the Presidency of the Board of Trustees, and that he would not be able to serve in that capacity after the approaching annual meeting in February next.

This announcement was received by us with sincere regret, and we were not then disposed to accept his conclusions; but now we must try to become reconciled to the unalterable decree of the great Arbiter, and endeavor to carry on, as best we can, the great work to which our precious friend has given the past fifteen years of his useful and beautiful life.

Mr. Francis White presented the following minute, which was unanimously adopted:

"Those who are here assembled as representatives of the Johns Hopkins Hospital and of the Johns Hopkins University have heard, with great sorrow, the announcement of the death of Francis T. King, the late President of the Board of Hospital Trustees and one of the University Trustees.

His counsel and opinions largely influenced Johns Hopkins to procure the incorporation of the Johns Hopkins Hospital, and to set apart, by his will, a large portion of his estate for its endowment.

He was made President of the Hospital Board when it was first organized, at the request of our founder, and he remained President of the Board from that period until his death.'

He was a member of the University Board of Trustees from its organization until yesterday.

We are witnesses of his unselfish devotion to the duties of these trusts from the day he assumed them until the last day of his life.

While this hospital building in which we are assembled is an enduring monument to the charity of the founder, it will also perpetuate the memory of the late President of the Hospital Board; for all men know that the growth and development of this Hospital have been largely due to the patient and untiring care with which he, from the beginning, watched over all its interests and concerns.

He was our personal and familiar friend. He was endeared to all engaged in the service of the Hospital and University by his unceasing courtesy, Christian life, and earnest desire to promote the usefulness and welfare of all who were brought into contact with him.

We desire to express to his family our deep sympathy with their loss. They have, however, the consolation of knowing that he closed a well-spent life in the evening of his days, honored and respected, not only in this community, but in the many sections of the country to which his zeal in good works had extended his influence.

This minute shall be entered among the proceedings of the Hospital Trustees and of the University Trustees. It shall be published in such newspapers as the chairman of this meeting may select, and a copy of it, attested by the chairman and secretary of this meeting, shall be sent to the family of the deceased."

Remarks of Mr. C. Morton Stewart, President of the Board of Trustees of the Johns Hopkins University.

I come here to-day, Mr. President, in an official as well as in a personal capacity, to ask to be permitted to lay my twig of cypress on this bier.

The Johns Hopkins University has sustained a peculiar, and I was about to say an irreparable, loss in the death of our honored colleague. The influence of his wisdom and ability was always felt in our council, and his prudence and carefulness have always been guiding features in the destiny of the institutions with which he has been connected.

It would have been wrong to say that his loss is irreparable, for great as it is, it would be better to emphasize the worth of such men by saying that the acts of good men live after them and become an integral portion of the foundation of the institutions with which they are identified in disinterestedness and intelligence.

We have had frequent remindings of late in our own immediate association that "our hearts, like muffled drums, are beating funeral marches to the grave"; but it is a pleasing conviction amid the sorrow surrounding us, to know that the memory of those who have been taken from us is closely

linked with honor for their virtues and gratitude for their faithful usefulness.

In this spirit, I offer our sincere expressions of sympathy and condolence to his family, in this the hour of their trial.

Remarks of Dr. J. S. Billings, Surgeon U. S. Army.

In the presence of so many life-long friends of Mr. King, some of whom have been intimate with him for more than half a century, and have been associated with him not only in the Hopkins trusts but in many others, it seems almost an impertinence for me to comment upon or eulogize him, or to do more than join in the general regret and offer to his family assurances of sympathy.

But, as many of you know, I was for a number of years intimately associated with Mr. King in the preparation of the plans and the supervision of the construction of this Hospital, and thus I had the good fortune to become one of his intimate friends, and not only learned to respect and admire his judgment, his energy and his benevolence, but to acquire a warm personal affection for him as a most lovely and lovable character.

Mr. King not only had wide views, but he gave great attention to details. He examined each plan carefully, and made many valuable suggestions and shrewd, kindly criticisms.

When the general plans had been completed and the work was fully commenced, so that the foundation walls of this Administration Building in which we are gathered were beginning to rise above the ground, he told me that after going to bed he would amuse himself by fancying how the Hospital would look when completed, and in imagination walking through the rooms and corridors, and seeing where the doors and windows were and how the light came in, and then the next morning he would go over the plans again to make sure that all was as he had seen it.

We visited together the hospitals of our large eastern cities and a number of the best hospitals and most famous schools in France and Germany, and everywhere he not only examined the general plan, but was interested in minute details of structure and organization. Mr. King was a cautious man and one desirous of collecting all the information and suggestions that could be obtained with regard to the various problems of construction, organization and administration which came before him, and for this reason he preferred to defer final decisions until the time when such decisions were actually needed. This was also the case in the selection of the officers and staff of the Hospital; but when the selection had been made, he trusted them fully and sustained and encouraged them in every way. He was a patient man, willing to wait the time necessary to secure the best results—unlike the majority of men, who demand and use green fruit.

And with all his attention to and love for details, he was also a very broad man, far-seeing as to the results of great and complicated undertakings, such as were many of the trusts with which he was concerned, and comprehensive as to their proper scope and outlook.

Just before the completion of this Hospital his health became seriously impaired, and he expressed to me his belief that he should not live to see it finished and that he must give up the attempt to organize its beginnings. "I should have liked," he said, "to see the Hospital in operation and the medical school at work, but I fear it is not to be." His health, however, improved, and he did see the Hospital at work, the wards filled with patients, the staff organized and busy. He did not in the body see the Medical School, but I trust that in the spirit he will erelong know that his plans and wishes have been carried out. He was one of the few thoroughly unselfish men that I have known—never scheming for his own interests, always thinking how he could help others and how to advance the interests of humanity. He was one of the salt of the earth, and by his death I know that I have lost one of the best friends I ever had.

Remarks of D. C. Gilman, LL. D., President of the Johns Hopkins University.

Eighteen years have gone since the founder of these two institutions was taken away and his generous purposes were made public. Six years previous, the two boards of trustees were legally incorporated. But earlier still, Francis T. King was associated with Johns Hopkins in the formation of plans for the bestowal of that princely fortune by which the University and the Hospital were created. We may therefore say that the friend whom we now honor has devoted twenty-five years—almost a generation—to the service of these noble trusts. A remark of Mr. King (I have been told) had great weight with our founder. "There are two institutions," he is reported to have said, "which will never die, a University and a Hospital; for there will always be the youth to educate, and the sick and suffering to relieve."

The sagacity of Mr. Hopkins was shown in his selection of trustees, and as one after another they are called away, we may bring to mind the services that each has rendered, and trace the influence that each has exerted in forming, upholding and strengthening two great institutions. To the Hospital our departed friend gave his chief attention; but he was likewise a faithful member of the University board. If I were to say that in the seat of learning for which I am speaking he was faithful, attentive, enlightened, efficient and unselfish, I should only employ the terms which are appropriate to the entire board. These are fundamental virtues without which there would be no confidence. But Mr. King was more than this. His personality included characteristics that belonged to him and to no one else. Those who met him in the academic walls will always remember that serene manner, that pleasant smile, that kindly voice, that friendly pressure of his hand. But with this gentleness—enthusiasm, cheerfulness, buoyancy and hope were closely associated. His hospitality was freely extended to us. In an emergency he came generously to the University's support. But he had still higher qualities, for he was governed by lofty ideals. No one saw more clearly than he, even before a brick was laid in its place or an officer called into service, the possibilities of these foundations. He delighted to imagine and foretell the good that would come to this city, this State, this region, this country, and the world, from the influences here exerted "for the advancement of knowledge and the relief of suffering." His was the charity that "hopeth all things."

Few were equal to him in two different qualities,—interest in minute details and appreciation of broad principles. He was remarkable for intellectual receptivity. His were not the habits of a scholar, poring over the experience of the world as recorded in books; nor those of a professional man familiar with the literature of a great science; he was not trained in the modern methods of inquiry and research; but he was a man living constantly among men, who had the rare sagacity to discover who knew what he wanted to know, and the still rarer ability to ask those questions which would elicit the desired information. All that he thus learned he made his own, and he gave it out freely to others. It was not as light reflected from a mirror; it was rather as oil in a lamp, which made a burning flame the brighter. He was rare in his spirit, rare in his energy, rare in his influence and success, rare in his power of doing good, rare in his qualities as a citizen and friend.

Those who are called upon to organize great institutions become to a certain extent identified with them, and long after Mr. King has gone these buildings will represent his thoughts and plans. But as these structures outlive his personality, so the great ideas which underlie them will outlive the piles of brick and mortar. "There will always be the youth to educate and the sick and suffering to relieve."

The last speaker reminded us that our departed friend had lived beyond his expectations to see the reality of his hopes. He saw the University strong in numbers and in influence; he saw the Hospital engaged in its beneficent mission with the most gratifying results; and then he was ready to depart. This brings to mind the story of the Venerable Bede as told by Aubrey de Vere. Bede first rendered into English the Gospels of Our Lord, and died as he finished the Gospel of St. John. "Still one verse remains," his young disciple said. The master answered, "Write, and write with speed," and dictated. The young man wrote, then said "'Tis finished now." And so the Saxon saint "passed to the heavenly kingdom." Like Bede, our friend has seen his life-work finished and has gone to his reward.

Remarks of Dr. Henry M. Hurd, Superintendent of the Johns Hopkins Hospital.

From the standpoint of the Hospital it seems as if the loss of Mr. King could not be made good. He had given to its service the best thought and energy of his life, and had formed an ideal of its work which was lofty and inspiring. He was familiar with the plans and details of its construction; he knew personally the heads of its departments and gave them his fullest confidence and co-operation; he knew the resident officers and head nurses; he was interested in the patients. For all he had a kind word, and in all felt a cordial interest. He was never more happy than when he learned of a new curative agency, a successful surgical operation, or the initiation of a new procedure which shortened suffering and relieved disease. The success of the operative work in the surgical and gynecological operating-rooms and the impetus which it has given to antiseptic surgery in America was to him a source of profound satisfaction and thankfulness.

It should not, however, be forgotten that his keen interest in all humanitarian and philanthropic enterprises was because he lived in the fear of God and believed it to be his duty to benefit his fellow-men. He had a keenly religious nature and was habitually devout. His home was a Christian home, and no one ever came under his roof who was not impressed by the religious atmosphere which pervaded it. He loved his children; he was kind to his servants; he was interested in everybody, regardless of religious belief, color, or station in life. It was sufficient for him to know that a man was in distress to secure his sympathy and ready aid. His last visit to the Hospital, on Thursday evening last, was to see a sick young man whom he had brought from the Blue Mountains at his own expense, and whose expenses in the Hospital he defrayed.

The project of the Medical School was especially near to his heart, and no sacrifice of personal feeling or comfort was considered when an opportunity was presented for furthering the enterprise.

He has been taken away in the midst of his abundant usefulness, and our loss seems irreparable.

Remarks of Dr. James Carey Thomas, of the Board of Trustees of the Johns Hopkins University.

I cannot let this occasion pass without adding a few words to what I have said elsewhere in reference to the death of my late friend, Francis T. King.

In early manhood, on my return from college, it was my good fortune to know intimately both himself and his lovely and accomplished wife. Her sudden death, which occurred a few years afterward, threw us into a more close companionship, and during the years that have elapsed since we have sat side by side in the discussion of things spiritual and things temporal. His example and words always awakened and strengthened that high ideal and liberal conception of men and things which he himself held.

Francis T. King was one of the men whose faith moved mountains and whose sanguine, yet temperate spirit was always striving to accomplish results. His genuine belief in the possibilities before him and his confidence in men made him a power wherever he went.

To the building and organization of this Hospital where we are now assembled he gave much thought and labor, the results of which we see around us. In the management of the University his interest was deep and his counsel and aid most valuable. It was the earnest wish of the last years of his life to see the opening of the Medical School under the auspices of the two foundations. It is not possible at this time for me to add more words: the things which he accomplished are his best eulogy.

BIOGRAPHICAL NOTE.

Francis Thompson King was born in Baltimore, February 25, 1819, and would have been seventy-three years old had he lived until the coming February. His father was Joseph King, Jr., an Englishman, who moved to Baltimore in the year 1816, and was engaged as a shipping merchant until

1831. His mother was Miss Tacey Ellicott, a daughter of Elias Ellicott, one of the founders of Ellicott City.

Mr. King was two years a student at St. Mary's College, Baltimore, and then entered the leading Friends' College, at Haverford, near Philadelphia. Upon the completion of his education he entered the dry goods jobbing and importing house of Janney, Hopkins & Hull, in this city, remaining there until he was of age, and then went into business on his own account, from 1840 until 1856, when he retired on a moderate income. During this time he was a partner in the importing hardware house of Plummer & King, the commission dry goods house of Bangs & King, and the wholesale shoe house of King & Carey.

In 1846 Mr. King married Elizabeth G. Tabor, of New Bedford, Massachusetts, a lady of much cultivation and devoted to works of charity and education. She died in 1856. Upon retiring from business, Mr. King devoted his life to the work of his church, the Orthodox Society of Friends, in which he was an elder, and to the management of public and charitable institutions. He was for more than twenty years the presiding officer of the Baltimore Yearly Meeting of Friends. He never held any political position, although often solicited to do so, except that for four years he was an active member of the Water Board, during the purchase of the Gunpowder and the construction of Druid Lake. He was elected a commissioner of finance under Mayor Chapman and was confirmed by the Council, but declined to accept the office. He represented the city's interest in the Baltimore and Ohio Railroad in 1860–1, and succeeded the late Johns Hopkins as a member of the board in 1873.

He was a director in several banks, insurance companies and other business corporations, and was intimately connected with most of the charitable institutions of the city. He was president of the Maryland Bible Society for seventeen years, and brought up its work from a very modest beginning to its present large and successful business. He was a manager of the Society at the time of his death. He was a trustee of the Johns Hopkins University, of Haverford College, and of Guilford College, at New Garden, N. C., and was president of the trustees of Bryn Mawr College, near Philadelphia.

Mr. King was one of the trustees selected by Thomas Wilson to organize and manage the various charitable foundations provided for by his will, and he was president of the Thomas Wilson Sanitarium for Children. He was also a trustee of the Samuel Ready Orphan Asylum. He organized the Central Savings Bank in 1854, then known as the Dime Savings Bank, and was its president from that time until his death. He was present during part of every day at the bank, and took great interest in the construction of its new building, on the corner of Charles and Lexington streets, which he lived to see completed and occupied. He also acted in the capacity of executor for the settling of some of the largest estates in Baltimore. Notable among them were the estates of Alexander Lorman, Johns Hopkins, Thomas Wilson and Galloway Cheston.

Mr. King was an intimate friend of Johns Hopkins, the founder of the Johns Hopkins Hospital, and was president of its board of trustees by his appointment. The last seventeen years of his life were largely devoted to the duties arising out of this office. He was chairman of the Building Committee, and gave close personal attention to the preparation of the plans and construction of the Hospital buildings. He went to Europe twice in the interest of the Hospital, and twice visited the leading hospitals of the United States pending the completion of the plans and the organization of the work. He continued to give the management of the trust funds and the work of the Hospital his daily supervision until his death.

On several occasions Mr. King delivered interesting public addresses, and among these perhaps the most important is one that he delivered at the formal opening of the Johns Hopkins Hospital in 1889.

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ACUTE ATAXIA (PSEUDOTABES) FOLLOWING DIARRHŒA.

BY HENRY J. BERKLEY, M. D.

Read at the meeting of the Johns Hopkins Hospital Medical Society, November 16th, 1891.

Since Joffroy and Leyden, in 1879 and 1880, first fully described the affection now usually known as multiple neuritis, the domain of that disease has been widely expanded, symptomatically, to include many previously undescribed affections, as well as some that were then considered as being of central origin, while pathologically its limits have extended from a simple affection of the peripheral nerves to a mixed form, affecting unequally the central and peripheral nervous systems, sometimes even trenching on the territory of the psychoses (Korsakow), and often indicative of a trouble arising from the effects of a toxical material implicating the entire nervous system (Senator, Möbius, Jendrassik, etc.).

In 1888, Leyden, in a lecture delivered before the Military Physicians Society of Berlin, subdivided polyneuritis into five different forms, infectious, toxic, spontaneous, atrophic, and the sensible form; the latter including neuritis of the peripheral nerves and neurotabes peripherica.

Later, in an article published in the *Zeitschrift f. klin. Med.* 1891, under the title of "Acute Ataxia," he distinguishes two forms of suddenly beginning ataxia of movement: the cerebral, characterized by the presence of disturbances of speech and sometimes psychical symptoms, besides the motor disturbance; and the sensible, distinguished by the presence of various anæsthesias and paræsthesias, without the cerebral implication. Paralyses may be present or absent with both. The latter is known under the more common name of pseudotabes.

After a number of infectious diseases, notably typhus abdominalis and diphtheria, there occasionally occurs a form of ataxia which is clinically indistinguishable from the ordinary ataxia in tabes dorsalis, and only to be discriminated from that disease by the history and progress of the affection. As before remarked, the positive symptoms are identical: there is the same gait, the throwing of the limbs, the pounding of the feet on the ground, the incoördination, and the local anæsthesias. These cases in the course of a few weeks either get well or pass on to a chronic condition. Rarely death results in the early stage.

The case I present this evening was, when I first saw it, hardly to be distinguished from a far advanced case of tabes. It is the first, I believe, that has been recorded as following an attack of diarrhœa, though Lenhartz has, in the *Berliner Klin. Wochenschrift*, 1887, given one of the purely cerebral form in an eight-year-old boy.

HISTORY.

Mrs. B———, aet. 58, was admitted to the hospital department of the City Asylum in July, 1889, with motor incoordination of the inferior extremities.

Family History.—The grandparents lived to an advanced age. The father was killed in an accident; the mother lived to the age of 87 without showing any nervous trouble. Patient had one sister and two brothers. The latter were killed in the Civil War; the sister is living and in good health.

Past History.—Mrs. B. seems to have escaped infectious troubles in her childhood, except for a mild attack of variola. She has been twice married; by the first husband she had two children, both of whom died of infant maladies. Syphilis and alcoholism are denied, and she says she has enjoyed fair health until the summer of 1888. In August of that year she had an attack of "diarrhœa," with slight bloody discharge. This continued through September and October, but did not incapacitate her from attending to her housework and sewing.

One day about the middle of November, while sitting at the sewing-machine, she attempted to arise from her chair, suddenly became unable to walk, and fell to the floor. Perviously there had been a feeling of heaviness in the lower limbs. On being helped into bed, she was able to move the legs freely while recumbent, but they felt swollen and like lead. There was no pain or sensation of formication. Vertigo, on every attempt to arise, made its appearance in a day or two. The sphincters were not disturbed. Speech was not lost.

The diarrhœa soon increased greatly, and in the course of a few days she became very ill, and was taken to the Protestant Infirmary, where, after several weeks' treatment, the diarrhœa was checked and her physical health improved.

While she was recovering, she noticed that the sight of the right eye had entirely disappeared, and that that of the left had become very imperfect. Perhaps owing to the illness, no pain or other symptom was noticed about the eyeballs.

After having been confined to the bed for several weeks, one morning she tried to rise and walk about the room, but found that she was totally unable to stand, and that vertigo came on whenever it was attempted.

There seems to have been no wasting of the lower extremities up to the date of her admission to this hospital.

During the succeeding spring improvement was quite rapid, and she was soon able to walk a few steps with the aid of a stick, though still troubled by the vertigo and heaviness of the inferior extremities.

Status Praesens, July, 1889.—Patient is a stoutly-built woman of above the medium height. The skin tints are healthy, the panniculus well developed. The psyche is clear, memory fair. Examination of the thorax and abdomen was negative. The urine contains neither sugar nor albumen.

The muscles of the extremities are well nourished and contract firmly with the will. There are no local atrophies or glossy skin; on the contrary, both are well nourished. The nails are not ridged. The mimetic action of the facial muscles is perfect, the eye muscles act normally. All muscles respond to the faradic current.

From the soles of the feet to the knees there is slight tactile anæsthesia; heat and cold are distinguished. Elsewhere over the surface of the body sensation is perfect. Gustatory and auditory sensations are not involved.

In the upper extremities the coarse muscular power is well preserved and there is no sign of incoördination; patient can surely touch the nose, unfasten a button, or undo a knot with

the eyes closed. This muscular sense is well preserved. There is nothing to note about the trunk, except an inconstant girdle feeling around the lower part of the abdomen.

In the lower extremities the coarse muscular power is equally well retained. While lying in bed, all joint movements are made without fatigue. There is an exquisite ataxia with all active movements of the limbs; one foot cannot with certainty touch the other. The knowledge of the position of the limbs is very imperfect. Incoördination on standing is well marked, and accompanied by a distressing sense of vertigo. The gait when the eyes are open is characteristically ataxic; when closed, impossible.

The knee-jerk is completely absent on both sides. There is no plantar reflex, and the skin reflexes are generally wanting. There is no ankle-beat.

No neuralgic symptoms have been noticed. Slowed sensation is not appreciable in the anæsthetic areas. Pain is there dulled. There have been no bladder complications. Various feelings of heaviness, weight and deadness are present in lower limbs. There has been no constant headache.

Patient is completely blind in the right eye, the light of a candle only being perceived when closely approximated to the eye. With the left eye, sufficient vision is retained to enable her to read coarse type with the aid of a strong magnifying glass. Letters 3 cm. long cannot be read with the unaided eye at any distance. In the right eye the iris does not contract at all to reflected light, with the left very feebly. The patient is partially color-blind in the left eye, red and green are recognized very slowly, the remaining fundamental colors are called gray. The perimeter is very contracted. There is a complete nasal scotoma occupying nearly half the retina, and a very considerable obscurity of vision in the inferior temporal quadrant. The ophthalmoscope shows a high degree of white atrophy of the optic nerve in the right eye, with obscurity of the vessels; in the left there is the same appearance, but in a minor degree.

Improvement in coördination was quite rapid during the warm months, so that by October, patient was able to move about the room with some degree of comfort.

September, 1890.—The general health has improved greatly during the past year. The ability to walk has increased, though there is a minor degree of incoördination with the eyes open; with the eyes closed, the patient reels considerably when standing. The vertigo has nearly disappeared.

Both knee reflexes have returned, and like the ankle-beat are somewhat exaggerated. The skin reflexes are above par; on irritation of the soles of the feet, particularly the left, widely extended associated movements are produced; the jerk is quickly extended over the whole limb, then to the left arm, followed by almost simultaneous movements of the right arm and then the leg.

The anæsthesia of the legs has decreased greatly, being only present about the soles of the feet and toes. There have been no neuralgic pains of any kind or constant headache. The girdle sensation and the various paræsthesias about the legs have disappeared. The sphincters continue to function normally.

The eyesight remains in about the same condition, the perimeter being reduced to a small circle of irregular diameter. The facial mimetic actions are perfect. Speech is still slow, not scanning. There is slight deafness to high tones, though the drums of the ears are natural.

September, 1891.—The general health has continued good since the last note was taken. Patient attends to ordinary housework without fatigue.

Deafness to high tones is quite marked, both on contact and through the medium of the air. The voice is heard without effort. Olfactory and gustatory sensations are normal. Speech remains the same.

There has developed a slight degree of incoördination in the upper extremities for finer movements. There is no anæthesia, however, and all the different sensations are distinguished. Coarse muscular strength is fair. The nails of the fingers are very much curved.

The coarse muscular power of the inferior extremities is also preserved. Ataxia is not marked, but the patient loses equilibrium quickly standing with closed eyes, accompanied by a tendency to fall forwards without staggering.

The knee-jerk is again uniformly absent (the biceps-jerk can be elicited with some trouble); the skin reflexes are generally present, the sole reflexes being exaggerated in a minor degree. The knowledge of the position of the limbs is fair.

There is slight dulling of tactile sensibility, limited to the plantar surfaces of the feet. The points of the calipers are distinguished at double the normal distance. Heat, cold, pain are distinguished, differences in weights are discriminated.

Eyesight has improved to some small extent in the left eye, colors are distinguished with more accuracy. The fundus of the eye, examined by Dr. Hartwig, does not differ from the condition in 1889. The complete nasal scotoma has receded in the upper quadrant, but is stationary in the inferior; the temporal is apparently more extensive than on the previous examination. The urine continues normal.

In the above history we may readily distinguish three different stages of the disease, an acute, characterized by an extreme degree of muscular incoördination of the inferior extremities, accompanied by intense vertigo and the extinction of the eyesight in one eye, with dimming of the vision in the other: these symptoms, with the exception of those caused by the optic neuritis, gradually receded, and were replaced in about a year to a large extent by others indicative of an irritation of the spinal reflex centers. Later these symptoms subsided, and the old ataxia, lessened somewhat in severity, alone remained, now accompanied by a distinct implication of the arms, apparently marking the progression of a degeneration upward in the posterior columns of the spinal cord. Meanwhile what little vision remained continued to improve in slight degree, the complete scotomata remaining stationary.

Of symptoms relating solely to an ordinary neuritis of the inferior extremities there were absolutely none, excepting the slight retrogressive anæsthesia. Our knowledge of the cause of incoördination is not sufficiently clear to distinctly say that it was due to the involvement of the sensible nerves of the feet; on the contrary, though the ataxia is now quite marked in the upper extremities, there is no appreciable loss of tactile

sensation in the hands; while the vertigo is hardly to be attributed to a lesion of the peripheral nerves; nor at the time when it was most intense was there any aural implication, and the disturbance of the equilibrium existed equally with bandaged and unbandaged eyes. It must, however, be mentioned that Dejerine[1] has noticed slight vertigo in one of his cases of tabes peripherica.

It is more reasonable, however, to refer it in this instance to a slight lesion in the region of the pons and cerebellum, that afterwards recovered its stability.

Regarding the case from all points, it is most probable that there occurred at the beginning of the trouble an auto-infection from some of the micro-organisms inhabiting the intestinal canal, introduced into the system through a lesion of the intestinal wall, produced by the inflammation of that tract during the diarrhœa, and influencing both the central and peripheral nervous systems.

The strongest support that this hypothesis has is the peculiar neuritis of the chiasma of the optic nerves. In persons who have died of infectious diseases, notably typhoid fever, I have noticed in the meninges around the sides and inferior portion of the optic chiasm a rather intense degree of inflammation, with much small cell infiltration and implication of the walls of the vessels, especially the veins. So far as a rather limited material went, this condition in different degrees was almost constant, and I have even seen the process proceed to the extent of causing a positive increase in the nuclei between the fibres of the optic nerve. I have never, however, seen the inflammation proceed to the induction of a distinct degeneration of the nerve fibres. The specimens were all out of Müller's fluid and did not admit of any positive results in a search for bacilli, and though the attempt was made on several occasions the results were fruitless.

However, it is just at this point that a most excellent focus is to be found for the deposit and growth of pathogenic organisms, and a room for the action of the toxical material engendered by them. The place even excels the region of the fissure of Sylvius, and the protuberance in the loose and folded character of the meninges, and the number of blood-vessels in its meshes, affording great facilities for an exudation and stasis of the blood. It may be readily imagined that in the present observation the surroundings of the chiasma afforded a nidus for the growth of whatever pathogenic germ was most active; also that it or its poisonous product could have acted with greater intensity on one side than on the other, giving as its results the peculiar neuritis of the nerves before described.

The occurrence of optic neuritis after measles and some other infectious diseases has recently attracted attention, and various theories and speculations have been advanced as to its causation. The most probable explanation is that already given, that there occasionally happens a neuritis of the optic nerves, caused by the abundance of the poisonous germ products, as in other infectious neurites.

I am not of the opinion that the slowness of speech had any connection with the disease. The patient has not noticed any change in her voice since the beginning of the enteric affection; it is probably therefore a purely normal condition.

Likewise I do not attribute much importance to the deafness to high tones, which is something we daily meet with without obvious connection with diseased states, and may in this instance be referred to possible senile changes in the middle ear.

The presence of ataxia in the upper limbs is interesting as showing that what was once apparently a peripheral affection of the nerves may afterwards ascend and involve the posterior columns of the medulla spinalis.

[1] Arch. de médecine éxpériment. et d'anatomie pathologique, 1889, No. 2.

LETTER OF DR. ABBOTT.

LABORATORY OF HYGIENE, UNIVERSITY OF PENNSYLVANIA,
PHILADELPHIA, *February* 1, 1892.

TO THE EDITOR OF THE JOHNS HOPKINS HOSPITAL BULLETIN.

My Dear Sir:—If you can afford me the necessary space in your journal I would like to call attention through its columns to several errors of omission that I find in my book, "The Principles of Bacteriology," recently published by Lea Brothers & Co. of this city.

A number of methods of work as described and recommended in that book have, to the best of my knowledge, been developed in the Pathological Laboratory of the Johns Hopkins University and Hospital, where I was formerly assistant, but I discover that in the haste of preparation I have failed to mention this fact in either the preface or body of the book. As some of these methods have never been described before, I take this means of correcting what I consider a serious omission on my part.

It is true that laboratory methods of work are usually considered common property, and so they should be; but, as is well known, every laboratory has certain technical devices of its own which may or may not be employed elsewhere, and which are believed by those using them to give the best results. Fundamentally the technique given in "The Principles of Bacteriology" is that common to most bacteriological laboratories, but still there will be seen here and there through the book certain deviations from the prescribed rules which are followed in the Baltimore laboratory and which are believed to be of advantage to the proper performance of this work.

If you will kindly insert this letter in the columns of your journal I shall be under many obligations.

Most respectfully yours, A. C. ABBOTT.

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Annual Register of the Johns Hopkins University. Giving the list of officers and students, and stating the regulations, etc.

PROCEEDINGS OF SOCIETIES.

THE JOHNS HOPKINS HOSPITAL MEDICAL SOCIETY.

Meeting of October 19th.

Dr. HALSTED in the chair.

Case of Extensive Muscular Atrophy.—Dr. HOCH.

Dr. Hoch showed a case of extensive muscular atrophy in a girl, Fanny A., now aged twenty. The atrophy was most marked in the whole left leg, and in the extensors of the lower right leg there was also a slight lordosis, and some atrophy of the thenar of the right hand; other muscles of arms and hands and those of the lower right leg being perfectly normal.

The electrical excitability was lost in most of the affected muscles; some, especially the thenar of the right hand, only presented diminution, the contractions in the latter group of muscles at the same time being slow.

The onset, which occurred six years ago, had been very acute, with loss of consciousness lasting for several weeks; the paralysis very extensive, taking in all four extremities and apparently some of the muscles of the back, but not the facial nor any other cranial nerves. The paralysis was confined to the motor system. The sphincters were not implicated nor was there any pain. The case had improved very materially as late as two to three years after the onset. In view of this late improvement, Dr. Hoch did not feel justified in looking upon the case as one of anterior poliomyelitis, which diagnosis might well be suggested, but thought that the case was more likely to be one of multiple neuritis, although he did not consider this to be more than a conjectural diagnosis.

Exhibition of Cases.—Dr. MORISON.

I am sorry that, on account of the heavy rain to-night, many of the cases which I hoped to show have not come.

Case of Keloid.—One of them is especially interesting from an historical as well as a pathological standpoint. It is that of a negress, dark in color and well built, who has a series of large keloids. They are seen upon the lobes of both ears and on the right side of the lower jaw. Those on the ears followed the piercing of them for ear-rings and the subsequent tearing through of the ears by pulling upon the rings in some fight or scrimmage which this race seems to be prone to. Both ears in this case have been split in this way. The keloid on the jaw followed a burn. What is most interesting, however, is that, when we uncover her shoulders, we see on the right side parallel lines of keloid running over the shoulder from the lower part of the scapula on the back to the largely-developed breast on the front. Some of the keloid lines are upon the breast itself. The patient applied for advice about her ears, to be relieved of the tumors from them, and it was by accident that the others were discovered. The cause of those on the shoulder brings back the history of this race in the past; she had been whipped with a cowhide when a young girl for some disobedience as a slave.

The negro race has a tendency to this form of growth, and surgeons who have operated much upon them in the past have often written of it. (*See illustration.*)

Malignant Syphilis.—The next case I have to show you is one of malignant syphilis, and I bring it before you because such cases are now fortunately rare. With our present methods of treatment, syphilis is most generally a disease which we can keep well in hand without letting it get away with us, but there are, now and then, cases which seem to defy any treatment, and such is the one before you. Two years ago he had an ordinary chancre of the penis, followed by a roseola in due time. He came to us with a universal tubercular syphilide (rupia) of the most aggravated kind, extending from and over his head to his feet. There was hardly a clear spot upon his body.

Every kind of known treatment, external and internal, has been tried, including the subcutaneous injection of formamide of mercury, and they all seemed to be of no avail. At last the ulcerations became so extensive and offensive his whole body had to be dressed with antiseptic and soothing salves and all internal medicine stopped excepting an ordinary tonic. After nearly six months of this tedious treatment, with an occasional abortive attempt to use either mercury or the iodide of potash or both, he has improved as far as the ulceration of the skin goes, but he has grown worse in other ways. There is a perforation of the roof of the mouth, a partial loss of the septum of the nose, enlargement of both shins, and very painful and well-developed dactylitis. He can sleep very little, even after large doses of morphia, and, although he is at last able to take small doses of the salicylate of mercury, which, by the way, is the best form of mercury I have found, the prognosis is very bad. He may die either from cranial endarteritis or from the syphilitic infiltration of some of the internal organs.

A Case of Melancholia following Typhoid Fever.—Dr. THAYER.

I wish to say merely a word or two with regard to a rather interesting complication of typhoid fever which has occurred in a patient now in the ward. This man was admitted to the hospital on the 24th of September, giving a history of having given up work three weeks before on account of headache, general pains and moderate diarrhoea. The appearances and his history indicated that he was in the third week of typhoid fever.

He was put upon a liquid diet and given baths at a temperature of 70° every three hours when the temperature was above 102.5°. The temperature pursued a steadily downward course, only four baths being called for, and since the 28th of September the temperature has been practically normal. On the 8th of October, the patient having had eggs before, was given milk toast and soft solids to eat, and was allowed to sit up with the bed rest. On the evening of the 10th, for the first time, he appeared to be nervous and anxious about his condition. He asked if he were very ill and whether there was any chance of his recovery. His anxiety was made light of, and when asked what had led him to have such ideas, he said that one of the patients had told him that he was very ill. On the 11th he was given for the first time meats, and was allowed dry toast with baked potatoes, but on this date he was more anxious about himself and seemed convinced that he was in a critical condition. On the 13th, his physical condition having steadily improved, the temperature having been normal for fifteen days, and the diet having been increased to nearly normal proportions, he was allowed to sit up for a short time out of bed. On the same evening he was found to be in a very nervous condition. He was despondent, weeping, and when the physician came by, seized his hand and begged him to save him. He declared he had seen the head nurse read the order that he was to be cremated that evening, and had also seen her receive the announcement that the box in which the operation was to be performed had arrived and was stored in the room below. He could not be convinced of the absurdity of his ideas. On the following day, at the suggestion of Dr. Hurd, the patient was kept in bed. The condition was not materially changed; he was tearful and very much alarmed about himself. He insisted that the head nurse had told him that he was to be cremated because he had acquired syphilis, which he denied, and his only request was always that he might be saved. On the following day he seemed rather better, and appeared a little ashamed of the ideas which he had had on the day before, but he soon went back into his former condition. To-day he is quieter and the delusions do not seem to be so active, but he is still very despondent about himself.

Cases of this nature, following acute disease, are not so very unusual, though this is the first which has come under my care

TO ACCOMPANY DR. MORISON'S CASE OF KELOID.

following typhoid fever. The case was seen by Dr. Hurd on the 13th and he has observed the patient daily since then, and I mention the case chiefly to bring out some remarks from him upon the subject.

[The patient after this became more silent and despondent and was discharged on October 26 in a distinctly melancholic condition.]

Dr. Hurd said that such cases of insanity after any exhausting bodily disease were not uncommon. Insanity developed after the eruptive fevers, pneumonia, acute tuberculosis, typhoid fever, and in fact as a sequel of any acute disease which diminished the vitality and interfered with the nutrition, assimilation and blood-making power of the patient. The delusions of such patients were those which accompany innutrition, and were characterized by suspicion and apprehension. The deficient blood-supply to the brain, or rather the altered quality of the blood-supply by reason of the preceding bodily disease, explained the delusions. The development of post-febrile insanity generally points to a hereditary tendency to mental disease. The presence of this insane heredity developing active disease under such circumstances lends an unfavorable prognosis to most of these cases. Sometimes they recover, but the majority develop chronic forms of insanity.

Dr. Osler said that in his experience, especially after typhoid fever, the prognosis was favorable, and cited several cases reported by him in Fasciculus I. of the Johns Hopkins Hospital Reports for 1890, where apparent recovery from mental disease after a tedious convalescence occurred.

Anatomical Lesions of Amœbic Dysentery.—Dr. COUNCILMAN.

Dr. Councilman exhibited the colon from a case of amœbic dysentery. The patient, a man æt. 25, was admitted to the hospital on September 11th. Four weeks before admission he was attacked with pain in abdomen and diarrhœa. He had 6 or 7 fluid stools daily without much pain. The diarrhœa continued up to death, which occurred on the 21st of September. Most of the time the stools were of a greenish-yellow color, but several times in the last days of his illness they were almost entirely pure blood.

Autopsy.—The body is that of a slightly built, tolerably well nourished man. The mucous membranes are very anæmic, the muscles pale and soft. On opening the peritoneal cavity there is no escape of gas. The parietal peritoneum is cloudy, covered with a very slight fibrinous exudation; there are a few ecchymoses scattered over it. The intestines are covered with the adherent omentum. On lifting this there is a free escape of gas from a cavity between the colon, the adherent omentum and the coils of small intestine. The walls of the cavity are covered with a dirty yellowish membrane. It contains a quantity of putrid pus mixed with fecal matter. Outside of this cavity the coils of intestine are lightly adherent and there is some exudation which is best marked at the line of adhesion. The exudation is fibrinous, rather gelatinous and transparent. The mesenteric glands are slightly enlarged. The liver is firmly adherent to the diaphragm by fresh adhesions. The diaphragm on the right side extends to the fourth intercostal space; on the left to the lower border of the fifth rib.

In both lungs there are small foci of catarrhal pneumonia. The heart is normal.

The liver is large, 24×19×8 cm., and weighs 1892 grammes. The capsule is smooth. The color is a pale brown and the lobules are only visible in places. Scattered over the surface there are numerous small white opaque areas which are not surrounded by a zone of hyperæmia and not elevated above the surface. On section small areas similar to those on the surface are scattered through the organ. They vary in size from 1 to 5 mm. A dry caseous-like material can be squeezed from them, leaving a ragged wall.

Spleen, kidneys, pancreas and adrenal glands are normal.

The large intestine is generally adherent by fresh adhesions. The cavity mentioned between it and the adherent loops of small intestine communicates with the lumen by a ragged opening 1 cm. in diameter. The entire intestine is soft and tears easily on attempting to remove it. Its walls are thickened and it is greatly dilated, the average circumference being 14 cm. It contains numerous ulcers and extensive sloughs from the cæcum to the anus. In the cæcum there are numerous round elevations with a small opening on the surface. There are also large irregular ulcers filled with a greyish transparent material, on removal of which the muscular coat is seen. In the transverse and descending colon and in the rectum there are large irregular ulcers covered with dark sloughs. On removal of the sloughs the transverse muscular coat is laid bare, and in places the ulceration extends through this to the longitudinal muscular coat or to the peritoneum. All of the ulcers are greatly undermined. The coats of the intestine are thickened and œdematous. There are elevated ridges which often pass from one ulcer to the other, and on section they contain the same whitish transparent material as the ulcers. Numerous actively moving amœbæ were found in the intestinal ulcers, in the peritoneal exudation and in the liver abscesses.

This case is of interest from a number of points of view. The history shows a much more acute illness than in the other cases which have come into the hospital, and there was not the intermittence which was so marked a feature in some cases. The abscesses of the liver differed from the other cases, in their great number, their small size and general distribution. Were it not for their size they might be taken for tubercles, the dry contents being more similar to the caseous material of a tubercle than to the contents of an abscess. In this case there could be little doubt that the amœbæ must have reached the liver by the blood-vessels and not by the peritoneum. In most cases the situation of the abscesses seems more easily explained by supposing that the amœbæ pass into the liver from the peritoneal cavity.

On examination of the tissues after hardening in alcohol, the liver abscess contained cell detritus, and at the edges there was a considerable degree of purulent infiltration. There were numerous foci of necrosis extending from the abscess and scattered through the liver. There were numerous amœbæ in the abscess contents.

In the ulcers in the intestine there were numerous amœbæ both in the material in the ulcer and in the surrounding tissues. The character of the ulcers was typical of this form of dysentery.

Particular attention was paid to the lymph-glands. Numbers of those in the mesocolon were examined. Some of these were adherent to the intestines, and the ulceration had almost extended to them. In none of them were any amœbæ found. The only alteration consisted in a slight hyperplasia and a marked increase in the large cells of the sinuses.

In the study of the tissues we have in general had the best results after hardening in alcohol and staining the sections with an aqueous solution of safranin, although other methods will give some results not attainable by this. The amœbæ are better preserved by hardening in Muller's fluid, but this does not give such good results for the tissue of the intestine. The safranin stains the nuclei of the amœbæ and makes their recognition more easy. Under any circumstances the amœbæ may be easily overlooked, or the large swollen cells in the submucosa and in the sides of the ulcers may be mistaken for them. They may be best recognized after this staining by the marked vesicular type of the nucleus. It appears generally as a brightly stained ring with small knob-like projections on the inside. The nucleus does not stain in hæmatoxylin or carmine or in any of the aniline fluids generally used. In specimens stained by the Weigert method, here and there a faintly stained nucleus may be found, but they are nearly all decolorized.

The Treatment of Malarial Fever with Methylene-Blue.—Dr. THAYER.

In the *Berliner Klinische Wochenschrift* for September 28th Guttmann and Ehrlich published an article on the action of methylene-

blue on malarial fever. They were led to undertake their experiments in consideration of the fact that methylene-blue stains the plasmodia, not only in dried specimens, but also in fresh blood. Celli and Guarnieri stained the living plasmodia by mixing a drop of fresh blood with some slightly colored human blood serum. These facts and also the fact that methylene-blue, after injection into the blood of warm and cold-blooded animals, stained certain elements in the red blood corpuscles, and particularly the nuclei of nucleated red blood corpuscles, led them to try their experiments on malarial fever, and they found that in the two cases which they had the opportunity to observe the methylene-blue had a decided action against the disease. The fever disappeared in the course of the first day or two, and in eight days at least the plasmodia disappeared from the blood. They lay particular stress upon the importance of this discovery in view of the fact that none of the synthetical products, such as chinolin, kairin, anti-pyrin, anti-febrin, ptyalin, phenacetine, etc., have ever had any effect on malaria.

The first case was one of tertian ague, chills occurring on the 21st, 23d, 25th, 27th of June. On the 28th of June 0.5 methylene-blue was given at 8 P. M.; at 10.30 P. M. the patient complained of slight strangury. On the following day the temperature rose to 38.3° C., but there was no chill. After this the temperature was normal. No organisms were to be seen after July 1st, the patient taking 0.1 methylene-blue five times in twenty-four hours.

The second case was one of quotidian ague, daily chills having occurred for three weeks. On the 18th of July, at 3 P. M., 0.1 of methylene-blue was given, to be repeated five times in the day. At 4 A. M. of the following day there was a chill, lasting two hours, the temperature rising to 39° C.; no chills or rise of temperature after this. On the 24th, six days after, the plasmodia had disappeared from the blood.

The following cases which I shall describe form merely a preliminary announcement. As soon as the article of Guttmann and Ehrlich reached us we began to use the methylene-blue in those cases of malarial fever which were admitted to the hospital. So far we have observed five cases. Three of these are now under observation. From the small number of cases, no definite conclusion can, of course, be arrived at, but we shall follow out the treatment in other cases and show some of our results later on.

Case I. was that of a man 58 years old, who was admitted to the hospital on September 26th. He gave a rather vague history of having had several chills within the past month. He complained at the time of entrance chiefly of weakness and œdema of the legs. The physical examination revealed little beyond anæmia and moderate œdema of dependent parts. The urine was negative and the blood showed no plasmodia. The patient had been taking quinine. He was given a nourishing diet and a bitter tonic and improved considerably. On October 18th, while up and about, he had a chill, the temperature rising to 104° at 4 P. M., the fall of temperature being accompanied by profuse sweating. On the 20th he had another chill beginning at 10.30, the temperature reaching 105° at 12. On the 21st numerous intracellular pigmented forms of the malarial organism were found. At 8 P. M. 0.1 methylene-blue was given, to be repeated every three hours during the night, and to be continued five times in twenty-four hours afterwards. On the 22d the temperature rose to 105° at 8 A. M., but the patient had no chill. On the 23d there was a marked diminution in the number of the plasmodia present. On the 24th the chill did not recur and the temperature remained normal afterwards. On this date the patient complained of strangury, which was relieved by a small amount of powdered nutmeg three times a day. No organisms were found in the blood after the 23d. The patient was discharged well on the 2d of November.

The second case is that of a patient now under observation, a man aged 20, who was admitted to the hospital October 24th. His illness began twenty days before with general malaise, headache and "creeping chills." He "took medicine" and was better for a few days, but had not felt well since the beginning of the trouble. He had had slight diarrhœa. On entrance the temperature was 104.2°, the pulse was dicrotic, the spleen palpable, and the general appearance of the patient distinctly typhoidal. The urine was free from albumen and the diazo-reaction was not present. Very numerous hyaline bodies were found in the blood. On the afternoon of October 25th 0.1 methylene-blue, five times a day, was ordered. The temperature fell rapidly, and from the 27th to the 30th only once touched a point about 100.5°. On the 1st, 2d, 3d and 4th of November the temperature ranged between 98.2° and 103.4° (on the third). The cause of this rise in temperature was not evident. Since then the temperature has been normal. On the 2d of November the blood still contained a moderate number of hyaline bodies, pigmented crescents and ovoid bodies. On the 8th of November an occasional crescent and hyaline body was seen. To-day, the 16th, after a long search, one pigmented crescent was seen. The man is out of bed and feels well. He has gained in weight and his appetite is good. In this case also, on the second day after the administration of the methylene-blue, there was strangury, which was relieved by nutmeg.

Case III. was that of a boy aged 18. His illness dated back 14 days, since when he had had daily chills. The temperature on admission was 103°, the appearance of the patient distinctly typhoidal. The spleen was palpable. The patient was just recovering from a chill. On the 24th the patient had a chill, the temperature reaching 104° at 12 o'clock. Numerous intracellular pigmented forms were seen with very coarse pigment granules. At 2 P. M. methylene-blue, 0.1, five times a day, was ordered. On the following day the patient had a chill, the temperature rising to 103.2° at 12 noon. On the 31st the temperature rose to 103.4° at 12 noon, but the patient had no chill. On the 1st of November the temperature was 100.1° at 2 P. M., but no chill occurred; since then the temperature has been normal. On November 3d, five days after entrance, an occasional crescent was to be seen. On the 7th of November pigmented ovoid bodies and crescents, and an occasional active hyaline body was found. On the 10th no organisms were to be found, and from that time on none were to be seen, the patient being discharged on the 13th with directions to continue his treatment for a week or ten days more. In this case also there was slight strangury, which was relieved by nutmeg.

Case IV. is that of a man 37 years old, who had been working on fishing boats on the bay since August; he was admitted on November 7th. For six weeks he has been suffering from "headache, malaise and fever," for which he took quinine pills. He complained chiefly of dizzy sensations and staggering when he tried to walk, and great weakness. On admission to the hospital the temperature was normal. The spleen was palpable. Examination of the blood showed ovoid and crescentic bodies with coarse granular pigment, also a few hyaline bodies; crescents fairly numerous. He showed a very interesting condition on attempting to stand and walk. The note says that on standing up the patient found great difficulty in keeping his balance. After swaying to and fro for several moments he would steady himself and stand fairly well, but on any change of position would lose his balance again. Beyond slightly exaggerated knee-jerks physical examination was negative. The urine was negative. The patient rapidly improved with regard to his dizziness and now walks quite well. He was given methylene-blue 0.2 four times a day, and also about a quarter of a teaspoonful of powdered nutmeg three times a day. On November 13th two hyaline bodies, one with several pigment granules, were found after a careful examination of two slides of blood. The blood shows, on careful examination of two slides to-day, one hyaline body.

Case V. is a man 26 years old. His history dates back four weeks. The attack began as one of tertian ague. He took quinine, and the chills became more irregular but did not cease altogether. He had another severe chill the day before entrance, the 10th of

November. On the 11th he was admitted in the middle of a chill, the temperature at 3.30 P. M. reaching 104.5°. Examination showed marked anæmia and a large and easily palpable spleen. The blood showed fairly numerous hyaline intracellular forms of the plasmodia, some actively amœboid. Methylene-blue, 0.1, every four hours, was begun on November 11th. On the 12th the patient had a slight chill, the temperature rising to 102.6°; on the following day the temperature rose to 102.8°, but there was no chill. On the 14th at 6 P. M. the temperature was 100.6°, since then the temperature has been normal. The blood to-day, 6 days after entrance, shows an occasional crescent. In this case also powdered nutmeg was given three times a day.

In all these cases the urine was carefully examined and no albumen has at any time been found. In all of the cases where methylene-blue alone was given, its administration was followed within the first three days by slight strangury, which, however, was immediately relieved by nutmeg, and in the cases where nutmeg was given in the beginning there were no unpleasant results. The urine in all the cases was of a deep blue color; the feces, though untinged when passed, became blue on exposure to air. The sweat and saliva, however, did not appear to be colored.

As we have said before, these few cases are entirely insufficient to justify any definite conclusions with regard to the anti-malarial value of methylene-blue. It has been, I think, unfortunate that all of these five cases, with the exception of one, have been of the more chronic and severe types of malarial fever, those in which the hyaline intracellular bodies and the crescents have been found. It is a well-known fact, that in these cases quinine is often very slow in its action, and that with the combined administration of quinine and arsenic, organisms may be found in the blood for weeks and months. The one case of common tertian ague yielded almost immediately to the methylene-blue, the organisms disappearing on the third day. In case two the organisms had not entirely disappeared in 23 days. This was a severe chronic case. In the third case, which appears to have been one of the more severe varieties, no organism was seen after the ninth or tenth day. The fourth and fifth cases are still under treatment. In none of the cases was there any chill later than twenty-four hours after the beginning of the administration of methylene-blue. It should be said that the doses of methylene-blue have probably not been large, and it is hard to know with what dose of quinine to compare the doses of methylene-blue which we have given. It may be found later that larger doses of methylene-blue are easily borne, and that they may show a more marked anti-malarial effect. The only conclusion that one can arrive at from these observations is, that methylene-blue certainly has, as Ehrlich and Guttmann claim, a distinct anti-malarial action, a fact which is certainly of great interest, and I think it would be well if more observers in this country were to carefully follow up this question.

Subsequent Note.—In case 4 no organisms were seen after the 9th day. Cases 2 and 5 remained under treatment for over a month each, improving much, but still having an occasional slight elevation of temperature. The blood showed always an occasional crescent or hyaline body. Each was discharged after having taken quinine for several weeks, *still showing a few plasmodia* in the blood.

Two other cases have been treated with methylene-blue since then, one of quartan and one of quotidian type, and both successfully. In the case of quartan chills there was no chill after the beginning of the administration of the drug, and in the quotidian there was but one. No organisms were seen in the quartan case after the 9th day, while in the quotidian an occasional plasmodum is still to be seen after 14 days.

These two cases would tend to strengthen the idea above expressed, that methylene-blue is really of some value as an anti-malarial agent.

THE JOHNS HOPKINS HOSPITAL HISTORICAL CLUB.

8th regular meeting, November 9, 1891. Dr. Hurd in the chair. 42 members present.

Papers were read as follows:

Pre-Hippocratic Greek Medicine: Dr. Welch. Remarks by Dr. J. S. Billings.

Homeric Medicine: Dr. Hurd. A letter was read from Dr. S. C. Chew. Remarks by Dr. Welch.

9th regular meeting, December 14, 1891. Dr. Hurd in the chair. 28 members present.

Richard Spriggs Steuart, Father of the Maryland Hospital for the Insane: Dr. Morris. (To appear in a future number of the Bulletin.)

Dr. Billings presented a manuscript receipt-book called "Arcana Fairfaxiana," and read extracts from it and made remarks.

Sources of our Knowledge concerning Hippocrates: Dr. Welch.

The Works of Lawrence Heister: Dr. Platt.

10th regular meeting, January 11, 1892. Dr. Hurd in the chair. 28 members present.

Hippocrates on Nervous Diseases: Dr. Thomas.

Hippocrates on "Airs, Waters and Places": Dr. Councilman.

The Schools of Cos and Cnidus: Dr. Welch.

Perkins Tractors, with an exhibition of the apparatus and pamphlets concerning the same: Dr. Billings.

PUBLICATIONS OF THE JOHNS HOPKINS HOSPITAL.

I.—HOSPITAL PLANS.

Five essays relating to the construction, organization and management of Hospitals. These essays were written by Dr. JOHN S. BILLINGS, NORTON FOLSOM, JOSEPH JONES, CASPER MORRIS and STEPHEN SMITH. They were published in 1875. One volume, bound in cloth, price $5.

II.—DESCRIPTION OF THE JOHNS HOPKINS HOSPITAL.

By JOHN S. BILLINGS, M. D., LL. D.

Containing 56 large quarto plates, phototypes and lithographs, with views, plans and detail drawings of all the buildings, and their interior arrangements—also wood-cuts of apparatus and fixtures; also 116 pages of letter-press describing the plans followed in the construction, and giving full details of heating-apparatus, ventilation, sewerage and plumbing.

Price.—Bound in half-morocco, $9.00; bound in cloth, $7.50; bound in light boards, $5.00.

III.—THE JOHNS HOPKINS HOSPITAL REPORTS.

Volume I. (The publication of this volume has been postponed owing to the time required for the preparation of additional plates.) It will contain the studies from the pathological laboratory. It will be edited by Dr. W. H. WELCH, Professor of Pathology and Pathologist to the Hospital.

Volume II. (See page 8 of the *Bulletin*.)

IV.—THE JOHNS HOPKINS HOSPITAL BULLETIN.

The Hospital Bulletin contains announcements of courses of lectures, programmes of clinical and pathological study, details of hospital and dispensary practice, abstracts of papers read and other proceedings of the Medical Society of the Hospital, reports of lectures, and other matters of general interest in connection with the work of the Hospital. Nine numbers will be issued annually. Volume III (1892) is now in progress. The subscription price is $1.00 per year. Vols. I and II can be furnished, bound in cloth, price $2.00.

Subscriptions for the above publications may be sent to

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NOTES ON NEW BOOKS.

History of Circumcision from the earliest times to the present. Moral and physical reasons for its performance, with a history of eunuchism, hermaphroditism, etc., and of the different operations practiced upon the prepuce. By P. C. Remondino, M. D. (Jefferson). (*Philadelphia and London: F. A. Davis, Publisher*, 1891.)

According to the author, uncircumcision—to use a Scriptural phrase—produces cancer, gangrene, calculi, balanitis, reflex neuroses, convulsions, neurasthenia, hysteria, enuresis, retention of urine, stricture, Bright's disease, toxaemia, and a host of minor ills. *Per contra*, syphilis and tuberculosis are prevented and immunity from the above-mentioned diseases is conferred by circumcision. Without stopping to question whether the rite accomplishes all that is claimed for it and the neglect of it is as fatal, one can read with much profit the mass of interesting historical literature which has been gathered by Dr. Remondino. Circumcision has existed as a religious rite in Chaldea, Phoenicia, Egypt, Arabia, Turkey and Mohammedan countries generally, and among the Jews since the time of Abraham. It is also well established that the rite was practised in Africa, Australia, Malaysia and Borneo to signalize the advent of manhood. The widely extended character of the ceremony is proof to the author that it rested upon something more than tradition, and was an evolution directly from the necessities of dwellers in tropical climates and a genuine boon to humanity. This does not seem in all respects proven, and the conviction forces itself frequently upon the reader that the argument is forced beyond its legitimate scope. The facts presented, however, are worthy of careful consideration, and it is clearly shown that the surgeon ought to interfere for the relief of all constrictions or narrowings of the preputial orifice. It is to be regretted that a book which contains so much that is interesting and profitable should be disfigured by much irrelevant matter—as for example digressions on medical ethics, allusions to the battle of Fredericksburg, the death of General Zollicoffer, Napoleon, Waterloo, Blucher, Carlyle, a Prince of Wales who could neither march forwards nor backwards, and much other interesting but inappropriate matter. This may be due to the fact stated in the preface that the book was originally written as a paper before a local medical club, and afterwards amplified into a book without being shorn of its popular features. As a scientific work its value would have been much increased had the facts so industriously gathered been related in a plain, succinct manner. The book deserves to be read. It constitutes one of the "Physician's and Student's Ready Reference Series" published by the same house. H.

The Principles of Bacteriology. A Practical Manual for Students and Physicians. By A. C. Abbott, M. D., First Assistant, Laboratory of Hygiene, University of Pennsylvania, Philadelphia. With Illustrations. *Philadelphia: Lea Brothers and Co.* 1892. Pages viii and 263.

This book is intended to be a practical guide for beginners in bacteriology. After a brief historical introduction and two chapters upon the general characters and the morphology of bacteria, the rest of the book is occupied mainly with descriptions of methods of work. These methods are described simply and concisely and represent those found best by the author. The reader is in general spared the account of a variety of procedures and is directed at once to the particular method deemed most suitable. This plan renders the book an especially useful one for beginners in bacteriological laboratories, or for those who are obliged to take up the subject independently.

A useful and novel feature in this book is the introduction of certain experiments in the form of problems to be solved by the student. This is calculated to train the powers of observation, and is a feature which might be still further systematized and expanded to advantage.

We think exception can be taken to the limitation by the author of the term sterilization to the destruction of bacteria by heat. Verbal errors are *Schulz* instead of *Schulze*, p. 19, and throughout the book *spirilli* instead of *spirilla*, and *flagellæ* instead of *flagella*. We do not think it necessary to introduce the German word "oese" in place of loop. Autoclave and not autoclav is the English term. Gabbet's stain for tubercle bacilli is not given, although it is doubtless the best for everyday use. An illustration would render easier of comprehension the description of the method of inoculating from one tube to another (p. 102). Where a special form of apparatus is described and illustrated as the microtome (Fig. 22), the name of the maker or inventor should be given.

The details to be followed in making injections into the ear vein of rabbits have never been described better, so that it would seem that any one who follows them must succeed in a procedure often found troublesome by the inexperienced. This description affords a good illustration of the simple and practical character of the book, which we have no hesitation in recommending to those who wish to begin the practical study of bacteriology. Of course a work on descriptive bacteriology is also indispensable.

W. H. W.

Operative Gynäkologie (Operative Gynecology). By M. Hofmeier, O. Ö., Professor der Geburtshülfe und Gynäkologie in Würzburg. 1892.

It is little more than a year since we received from Prof. Hofmeier's pen the tenth enlarged and improved edition of Carl Schröder's Handbuch der Krankheiten der weiblichen Geschlechtsorgane. This work has, for many years, deservedly been one of the foremost text-books in Europe. We now again receive from Prof. Hofmeier a work designed to fill a somewhat different place. The symptomatology and pathology, as well as the various modes of minor treatment, have within a few years so rapidly increased that any compend of gynecology must of necessity be greatly abbreviated. This led to the production of Hegar and Kaltenbach's Operative Gynäkologie. The reception of this work, devoting over 800 pages to the most intensely practical part of the specialty, was such that a third edition was issued in 1886. The present work by Prof. Hofmeier is the first recent attempt to enter upon this ground. Changes in gynecological technique have been so great; many complicated problems have advanced so much closer to a satisfactory solution, that the time was ripe for a restatement covering the whole operative field. Prof. Hofmeier has been a constant contributor to the journals, and the trained scientific writer is apparent throughout this work. It is also gratifying to note what successful use Prof. Hofmeier has made of his large facilities since leaving Berlin. While the individuality of the work is pronounced, it does not interfere with its general usefulness. The illustrations are clear and valuable elucidations of the text. H. A. K.

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